Amendments to the Drawings:

The attached drawing sheets include changes to Figures 2A and 2B. In Figure 2A, certain connector lines are changed to conform to the description provided in the specification, as well as schematic diagram conventions for electronic drawings. In Figure 2B, the numeral designation "264" is added to designate the flip-flop, as referred to in paragraph 19 of the specification.

REMARKS/ARGUMENTS

In the Office Action mailed May 2, 2007, claims 1-23 were rejected. Additionally, claims 16 and 17 were objected to. In response, Applicants hereby request reconsideration of the application in view of the amended claims and the below-provided remarks. No claims are added or canceled.

For reference, claim numbers are added to claims 16 and 17. Claims 1 and 14 are amended to clarify the language of the claims. Corresponding amendments are made to the dependent claims which depend from claims 1 and 14. Claims 2 and 16 are also amended to refer to an "XOR network" (instead of an "exclusive or network") to maintain consistency with the language of the other claims. Additionally, claims 5- and 19-22 are amended to recite the "previously stored value of the mistake signal" to comply with antecedent basis requirements. Other claims are also amended to clarify the language of the claims. Applicants respectfully submit that these claim amendments are supported by the originally filed specification.

Allowable Subject Matter

As a preliminary matter, Applicants respectfully note that the present Office Action does not reject claims 4, 9, 18, or 23 under 35 U.S.C. 102 or 103. The only rejections of claims 4, 9, 18, and 23 are under 35 U.S.C. 101. Hence, Applicants respectfully submit that claims 4, 9, 18, and 23 recite allowable subject matter under 35 U.S.C. 102 and 103 and would be allowable over the cited references once the rejections under 35 U.S.C. 101 are resolved.

Claim Rejections under 35 U.S.C. 101

Claims 1-23 were rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. In particular, the Office Action states that the claims are directed to a generator and method for generating a random number in accordance with a mathematical algorithm. Furthermore, the Office Action states that the claims must either include a practical/physical application or a concrete, useful, and tangible result.

As a preliminary matter, Applicants note that the indicated generator and method are generally directed to subject matter that places them squarely within the categories defined by 35 U.S.C. 101 (i.e., processes, machines, manufactures, and compositions of matter). In particular, the preamble of claim 1 recites "A random number generator" (i.e., a statutory machine), and the preamble of claim 14 recites "A method of random number generation" (i.e., a statutory process).

Moreover, Applicants respectfully submit that these claims are directed to statutory subject matter, despite the Office Action's assertion, because these claims are directed to a generator and a method that have both a physical application and a practical application. The MPEP states that the tangible requirement requires that the claim must recite more than a 35 U.S.C. 101 judicial exception (i.e., abstract idea, mathematical algorithm, natural phenomenon, or law of nature). MPEP 2106(IV)(C)(2)(2)(b). Where a claim includes a reference to subject matter included in the judicial exceptions, the process claim must set forth a practical application of that judicial exception to produce a real-world result. The MPEP also states that the tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. Thus, as recognized by the Office Action, the claims recite statutory subject matter if the claims are directed to a physical application or have a practical application.

Here, the limitations of the claims are tied to structural components of a machine or apparatus. In particular, the limitations of each of independent claims 1 and 14 recite structural components, including "latches," "first XOR logic," and "second XOR logic." Therefore, the limitations of claims 1 and 14 are tied to structural components and, hence, recite patentable subject matter. Claims 2-13 and 15-23 depend from and include the limitations of claim the corresponding independent claims 1 and 14 and, hence, recite the indicated structural components. Accordingly, claims 1-23 recite patentable subject matter because they are tied to structural components.

Additionally, the random number generator of claim 1 and the method of random number generation of claim 14 have a practical application of generating a random number. Applicant respectfully submits that there are many known uses for random number generation in computer devices and computing technology, including for

example computer simulation and data encryption. The fact that the claims do not restrict the generator and method to a particular field of use does not negate the availability of practical applications for the random number generator and the method of random number generation. Given the breadth of practical applications for random number generation in computing technology, as well as other fields of art, claims 1-23 recite patentable subject matter because they have practical applications related to random number generation.

Since the limitations of the claims are tied to structural components, Applicants respectfully submit that claims 1-23 recite patentable subject matter. Additionally, claims 1-23 recite patentable subject matter because the random number generator and the method of random number generation have a practical application of generating a random number for use in, for example, computer devices and computing technology. Thus claims 1-23 satisfy the requirements set forth in Office Action and in the MPEP with respect to determining whether a claimed invention complies with 35 U.S.C. 101. Accordingly, Applicants requests that the rejections of claim 1-23 under 35 U.S.C. 101 be withdrawn.

Response to Claim Rejections under 35 U.S.C. 102/103

Claims 1-3, 6, 10, 11, 14-17, and 20 were rejected under 35 U.S.C. 102(b) as being anticipated by Weimerskirch (U.S. Pat. No. 6,963,888, hereinafter Weimerskirch). Additionally, claims 5, 7, 8, 12, 13, 19, 21, and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Weimerskirch. However, Applicants respectfully submits that these claims are patentable over Weimerskirch for the reasons provided below.

Independent Claim 1

Claim 1 recites "a plurality of cross-connected latches providing at least two latch outputs" (emphasis added). Claims 1 also recites "second XOR logic to compare the current value of the mistake signal with a previously stored value of the mistake signal to determine whether to obtain a random bit from a pseudo random stream of bits" (emphasis added).

In contrast, Weimerskirch does not disclose cross-connected latches. Weimerskirch merely describes core random elements 400 in a random number generator. Weimerskirch, Fig. 7. Each core random element 400 includes a plurality of flip-flops 440-442. Weimerskirch, Fig. 4. However, neither the core random elements 400 nor the flip-flops 440-442 are cross-connected. In Fig. 7 of Weimerskirch, the core random elements 400-1 and 400-2 merely receive input signals derived from the same flip-flop 725, but the core random elements 400-1 and 400-2 are not connected or cross-connected in any way. The same general configuration is also shown in Fig. 6 of Weimerskirch. In Fig. 5 of Weimerskirch, the core random element 400-1 receives an input from the output of the core random element 400-2, but this serial connection is not a cross-connection, as recited in the claim.

The connection of the core random elements of Fig. 5 is similar to the serial connections of the flip-flops 440-442 of the synchronizing circuitry 430 of each core random element 400. In particular, Weimerskirch describes the synchronizing circuitry 430 as having a number of "serial flip-flops," meaning flip-flops connected in a serial manner with the output of one flip-flop being input to the next flip-flop. Weimerskirch, col. 6, lines 64-66. Although the flip-flops 440-442 of the synchronizing circuitry 430 are connected together, these connections are merely one-way connections and the flip-flops do not cross-connect with one another. In other words, the flip-flops are not connected in a manner to mutually cross outputs back as inputs into corresponding flip-flops (i.e., an output of a first flip-flop is used as an input for a second flip-flop, while an output of the second flip-flop is used as an input for the first flip-flop). Thus, Weimerskirch merely describes serially-connected flip-flops and does not disclose cross-connected flip-flops or latches. Therefore, Weimerskirch does not disclose all of the limitations of the claim because Weimerskirch does not disclose cross-connected latches.

Additionally, Weimerskirch does not disclose comparing current and previously stored values of a mistake signal, as recited in the claim. Weimerskirch merely describes comparing at XOR gate 760 two signals which indicate the metastability of the core random elements 400-1 and 400-2. In other words, the XOR gate 760 of Weimerskirch is used to compare two different signals, and neither of the two signals is a previously stored value of the other signal. Although the inputs for the random core elements 400-1

and 400-2 are derived from the same latch value stored in the latch 725, the signals that are compared are different signals that are dependent on the functionality of the separate random core elements 400-1 and 400-2. Furthermore, there is no disclosure in Weimerskirch of comparing two values of the same signal at different times. Thus, Weimerskirch merely describes comparing different signals and does not disclose comparing current and previously stored values of the same signal. Therefore, Weimerskirch does not disclose all of the limitations of the claim because Weimerskirch does not disclose comparing current and previously stored values of a mistake signal, as recited in the claim.

Accordingly, Applicants respectfully assert claim 1 is patentable over Weimerskirch because Weimerskirch does not disclose all of the limitations of the claim, including the limitations related to cross-connected latches and comparing current and previously stored values of a mistake signal.

Independent Claim 14

Applicants respectfully assert independent claim 14 is also patentable over Weimerskirch at least for similar reasons to those stated above in regard to the rejection of independent claim 1. In particular, claim 14 recites "generating at least two latch outputs from a plurality of cross-connected latches" (emphasis added) and "comparing the current value of the mistake signal with a previously stored value of the mistake signal at second XOR logic to determine whether to obtain a random bit from a pseudo random stream of bits" (emphasis added).

Here, although the language of claim 14 differs from the language of claim 1 and the scope of claim 14 should be interpreted independently of claim 1, Applicants respectfully assert that the remarks provided above in regard to the rejection of claim 1 also apply to the rejection of claim 14. Accordingly, Applicants respectfully assert claim 14 is patentable over Weimerskirch because Weimerskirch does not disclose a cross-connected latches and comparing current and previously stored values of a mistake signal.

Dependent Claims 2-13 and 15-23

Claims 2-13 and 15-23 depend from and incorporate all of the limitations of the corresponding independent claims 1 and 14, respectively. Applicants respectfully assert claims 2-13 and 15-23 are allowable based on allowable base claims. Additionally, each of claims 2-13 and 15-23 may be allowable for further reasons.

CONCLUSION

Applicants respectfully request reconsideration of the claims in view of the amendments and remarks made herein. A notice of allowance is earnestly solicited.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account **50-3444** pursuant to 37 C.F.R. 1.25. Additionally, please charge any fees to Deposit Account **50-3444** under 37 C.F.R. 1.16, 1.17, 1.19, 1.20 and 1.21.

Respectfully submitted,

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